

Attorney Docket No.: 944-3.79
Serial No.: 09/912,227

REMARKS

This paper provides a further amendment to the claims, to accompany the filing of a RCE filed in response to the Office action mailed 13 May 2005 and a subsequent advisory action. Four new claims are added and none are canceled, and so with this paper, claims 1-7, 10-16, and 20-35 are now pending. Of the pending claims, claims 23-30 are allowed, and claims 4-6, 14-16, 21 and 22 are objected to.

In the final Office action mailed 13 May 2005, claims 1-3, 7, 10-13, 20 and 31 were rejected under 35 USC §102, of which claims 1, 11 and 31 are independent. In rejecting the claims, the Office relied on U.S. Pat. No. 6,643,322 to Varma et al. With this paper, claims 1, 11 and 31 are amended to include as a limitation that the second indication of the quality of the signal is based on an outer loop power control process. Applicant respectfully submits that Varma does not teach or suggest using outer loop power control in any respect in deciding to perform link adaptation.

Accordingly, applicant respectfully requests that the rejections under 35 USC §102 of claims 1, 11 and 31 and of all rejected claims that depend from claims 1, 11 and 31 be reconsidered and withdrawn.

In addition, new claims 32 and 33 are added, both reciting that a decision to perform link adaptation is made based on a second indication of channel quality that is in turn based on a first indication of channel quality and one or more previous values of the first indication of channel quality. Support for the limitation that the second indicator is based on the value of the first indicator and previous values of the first indicator is provided e.g. at page 10, lines 10-20. The term "link adaptation" is defined in the new claims as resulting in a change

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in coding or modulation level or both. Applicant here reviews the record to show that none of the applied references teach or suggest the invention as in the new claims.

In the first Office action (mailed December 24, 2003), claims 1 and 2 (among others) were rejected based on US Pat. No. 6,163,705 to Miya. In response to the Office action, applicant's attorney argued that Miya does not disclose link adaptation in any respect, and the rejection based on Miya was then withdrawn in the next Office action (namely the Office action (mailed on March 1, 2004). In that Office action, claims 1 and 2 (among others) were rejected based upon US Pat. No. 6,215,827 to Balachandran. In response to that rejection, applicant's attorney again noted that Balachandran, like Miya, nowhere teaches link adaptation in any respect. Unrelatedly, in order to clarify the claims, applicant's attorney changed claim 1 (and the other independent claims) to recite that the decision to perform link adaptation is based upon the first and second indication of the quality of the signal, and explained that such language is intended to encompass the original language but is offered so as to make more clear that the invention as claimed also encompasses embodiments where the first and second indicator are the same kinds of indicators. In response to the assertion that Balachandran does not teach link adaptation, the Examiner withdrew the rejection based on Balachandran and then rejected claims 1 and 2 (among others) based upon US Pat. No. 6,639,934 to Engstrom. Applicant again argued that the applied reference did not teach link adaptation. However, to help in prosecution, applicant included in the independent claims a definition of link adaptation; i.e., a change in coding or modulation level or both. The Examiner, in response, indicated that the amendment would raise new issues, and so applicant filed a Request for Continued Examination (RCE). In response to the RCE, the Examiner then

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dropped the rejection of claims 1 and 2 (and the other related rejections) based upon Engstrom, but then rejected claims 1 and 2 (among others) based on US Pat. No. 6,643,322 to Varma.

Varma teaches the use of ACK/NACK signaling as a basis for deciding whether to perform link adaptation. (Varma teaches comparing to a threshold the number of errors as indicated by ACK/NACK signaling.) To further distinguish from Varma, applicant amended claim 1 (and the other related claims) to limit the invention to the second device performing the steps of the method claim 1 (or including corresponding means). In contrast, Varma teaches a device receiving a signal and then sending an indicator (ACK/NACK signaling) back to the sender of the signal, which is then compared by the sender with some target/ threshold, as a basis for the sender deciding whether to perform link adaptation. So according to the invention as in claim 1 now and with the paper to which this paper is a supplement, the receiver of a signal produces a first and also a second indicator of channel quality and then decides on link adaptation, whereas in Varma one device receives a signal and then produces an indicator of channel quality--an ACK or a NACK--and sends it to the sender of the signal, which then decides on link adaptation.

In response, the Examiner asserted that Varma also teaches whether to perform link adaptation based on other factors, such as signal-to-interference-plus-noise ratio. In response, applicant's attorney argued that a fair reading of Varma makes clear that Varma discloses only using either one or another single measure of quality, either SINR or ACK/NACK patterns, whereas in the invention as claimed, both a first indication and a second indication are used.

Now as noted, the new claims recite that based on an examination of a received signal a first indicator of channel quality is provided, then a second indicator is provided based on

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the first indicator and also one or more previous values of the first indicator, and then a decision to perform link adaptation is made based on the second indicator. The claims are not limited as to the entity performing the recited steps.

As argued, Varma nowhere teaches examining a signal to provide a first indicator of channel quality and then providing a second indicator *based on the current and also previous values of the first indicator*, and finally deciding as to link adaptation based on the second indicator. Instead, as explained before, Varma teaches a first communication device examining a signal, and then sending an indication of quality of the signal (ACK/NACK signals or a SINR value) to a second communication device which then determines whether to perform link adaptation based on the (one and only) indication of the quality of the signal (by comparing it with a threshold in the case of ACK/NACK signaling, and for SINR using SINR to determine a best set of link parameters based on throughput efficiency vs. SINR relationships).

Accordingly, applicant respectfully submits that new claims 32 and 33 are allowable.

Finally, new claims 34 and 35 are added. These limit the invention to the use of a *signal to interference ratio* as a first value of signal quality, from which a second indicator is determined, and a decision as to link adaptation is then made based on the second indication. These also incorporate the same definition of link adaptation as used in the other claims. Varma does teach the use of SINR as a basis for deciding whether to perform link adaptation (but ACK/NACK signaling is indicated as preferable by Varma), but does not teach determining a second indicator based on a *signal to interference plus noise ratio* (SINR), and then deciding based on the second indicator. Instead, Varma teaches determining the parameters to use for a

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link based directly on the SINR value. The parameters used are those for which the throughput is highest, per e.g. the graph in Fig. 3. Thus, Varma cannot be said to teach proposed new claims 34 and 35.

Accordingly, applicant respectfully submits that new claims 32 and 33 are allowable.


For all the foregoing reasons it is believed that all of the claims of the application are in condition for allowance and their passage to issue is earnestly solicited. Applicant's attorney urges the Examiner to call to discuss the present response if anything in the present response is unclear or unpersuasive.

Respectfully submitted,

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